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10/565,536	01/19/2006	Jean-Michel Diosse	21.1152	2862

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EXAMINER	
JANCA, ANDREW JOSEPH	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	**Application No.** 10/565,536	**Applicant(s)** DIOSSE ET AL.
	Examiner Andrew Janca	**Art Unit** 1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 March 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2 and 4-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 4-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 3/24/2009 with regard to the rejections of amended claims 1-2 have been fully considered but they are not persuasive. Applicants argue (Remarks p 4 section "Claim Rejection 35 USC 102") that WO 98/34721 by Davies does not disclose that an effective flow rate of one selected component of the mixture is monitored, and that based on this value the individual flow rates of each of the other components of the mixture are adjusted.

2. Davies explicitly teaches that the flow rate of either one or of each one of the materials from their individual hoppers may be controlled, to control the proportions of each material being mixed: this process may be controlled for instance by a computer. In particular this process is taught in order to allow for *on-line control* of mixing proportions (4:27-33). Monitoring the flow rate of each of the materials is thus inherently taught by Davies, for if the control means such as the variable size outlet aperture were adjustable before the mixing process only to accord with a predetermined recipe the reference would not explicitly teach "on-line control": for there is no reason why control on the fly would be needed if the apparatus were used only to dispense materials according to a recipe with complete faith that while the process was underway the materials would always flow through the aperture or gates at the rate previously commanded by the operator, with the only feedback or quality control being some off-line measurement of the final product used only to correct feed rates for a subsequent

batch. One means by which the flow rate may be monitored during operation is taught by Davies, visual observation by the operator in the embodiment where the material flows intersect and mix in mid-air rather than inside some visually opaque channel (3:19-21; figure 3): for the flow rates not to be monitored, for instance for it not to be noticed at all when clogging or jamming should cause one flow to cease during operation as inevitably happens in physical dispensing systems, would require the operator of the machine and its flow control apparatus to operate them with her eyes closed. It would be clear to one of ordinary skill in the art that the machine and on-line flow-rate control means of Davies could not be properly operated without monitoring an effective flow rate of at least one component of the mixture, and hence that such monitoring is necessarily present in the method he teaches. See *In re Robertson,* 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999).

3. Davies teaches as alternatives either control over the flow rate of one material only, or control over the flow rates of each of the materials (4:27-29). In the first alternative, the flow rate of one material is fixed, and thus control over the mixing proportion can be exercised only by adjusting the flow rate of the other material: thus if the first material is flowing too fast or too slow, the individual flow rate of the other component of the mixture must necessarily be adjusted based on the value of the first material's flow rate which cannot be controlled on the fly. In the second alternative where individual control over each flow rate is given to the operator, it is conceivable that the operator might be instructed to accept as fixed one of the two flow rates, and permitted to adjust only the other one to bring it into proper mixing proportion with the

first, for instance if one valve or gate were left completely open to permit its maximal flow; but it is more reasonable that since control over each valve or gate individually is given in order that it may be exercised, that both are so adjusted during use, such as when one adjusts the temperature of water coming from a shower tap in the home by adjusting first the hot water, then the cold, and so on in alternating succession until the proper proportion of hot and cold is achieved. Thus in at least one of the two control scenarios taught by Davies, during on-line operation of his apparatus and method it is necessarily based on the value of the observed flow rate of one component in the mixture that the individual flow rates of each of the other components of the mixture are adjusted.

4. Applicant's arguments with respect to amended claims 4-8 have been considered but are moot in view of the new ground(s) of rejection. Regarding the substance of the rejection of amended claim 5 over Davies in view of US 2003/00772208 A1 by Rondeau et al (Remarks p 4, "Claim Rejections – 35 USC 103"), Rondeau et al teach a computer interface for an operator to monitor, calculate, process, and control the several flows of a machine for mixing a plurality of solid materials such as cement (para 23) with water; which is aided by a sensor control loop (para 62-63) including flow meter sensors 104 and 128 (paras 19, 32, 35) to measure and control the flow rates of the flowing solid materials by means of controllable valves, such as valve 304 (para 24). Since Davies teach control means to control the action of the various valves in their apparatus (4:27-33) as outlined above, it would have been obvious to one of ordinary skill in the art of mixing substances to provide mechanical sensor means to directly supply the control

means of Davies with needed information about the state of the system it means to control.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 98/34721 by Davies.

7. With regard to claim 1, Davies discloses a method for obtaining a mixture of solid components in a predetermined ratio (4:29-30); each solid component being stored in a hopper 5, 6 (figures 1, 3, 4, 6); providing for each component a fluidized flow rate corresponding to its ratio in the mixture (4:1-2): if a plurality of substances enter a mixture at the same time, and continue to flow throughout the mixing procedure, the proportion of each (and hence the ratios between these proportions) in the final mixture must necessarily be equal to the rate at which they flowed into it: (rate in kg/s) x (net time in s) = (net total in kg). Davies disclose several possible means of controlling these individual flow rates (3:37-39, 4:12-17, 4:27-33), and hence means of controlling the final proportions of the mixture; adjusting the flow rate of each, in real time while they are flowing (3:37-40, 4:27-33); which are conveyed to a static mixer, inclined flow surface 3 (figure 1) through a common inlet, the region where flow 24 intersects flow 23,

exclusively by gravity (2:38-39); which continuously produces a flow of the mixture at an outlet, hopper 7 (3:15-17); wherein the method further comprises monitoring an effective flow rate of one selected component of the mixture, and adjusting in real time the individual flow rates of each other component based on said effective flow rate (3:19-21 referring to figure 3, but relevant also to 1, 4, 6; 4:27-33).

8. With regard to claim 2, in the embodiment of Davies' figure 1 the mixing of the two (or more: 5:1-4) substances is effected by the body of the mixer itself, flow surface 3, which is a static obstacle to their further and separate fall under gravity, and which hence constrains them on a common surface where they must disperse from their independent streams, and mix (Davies claim 4). Were flow surface 3 absent, the substances would not mix.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 4-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 98/34721 by Davies in view of US 2003/0072208 A1 by Rondeau et al.

11. With regard to claim 4, Rondeau et al. teach that using a cement mixing machine such as that of Davies to mix cement into a slurry, and pumping it into the well, is an application of such mixers common in the art (para 3). Davies and Rondeau et al. are

analogous arts because they are from the same field of endeavor, the mixing of cement to make concrete. The motivation to use the machine of Davies to mix and pour cement slurry into the annulus of a well, would have been to isolate the various producing zones of a newly drilled oil well from each other (Rondeau et al para 3).

12. With regard to claim 5, Davies teaches an apparatus for preparing a mixture of solid components in a predetermined ratio comprising a hopper 5, 6 for each individual component:

a. said apparatus comprising means for adjusting the flow rate of each component based on the ratio of each component in the mixture (4:27-33): in particular a Man Machine Interface and a Programmable Logic Controller (processing means) being a computer (line 33), controlling sliding plate valves or apertures (line 31), in order to control the rate of flow material (line 28) from one hopper (adjusting the flow rate of one component, while leaving the other fixed, adjusts the former component's flow rate based on and relative to the flow of the latter component) or both hoppers (line 27), in order to control the proportions of the mixed materials (lines 29-30) in real time (line 30); a static mixer 3 having an inlet, the center of mixer 3 where flows 23 and 24 meet, into which all individual flows are conveyed exclusively by gravity (figure 1); said mixer continuously producing at its outlet, the bottom end of 3, a flow of mixture 25; a Man Machine Interface which, being a computer (line 33), is capable of being input with a mixture recipe, and calculating for each component of the mixture a predetermined flow rate from a ratio of the components in the mixer recipe; and

an adjustable valve, the effective flow rate of the component capable of being adjusted depending on an opening of the adjustable valve (4:27-33). Davies does not explicitly teach a sensor system capable of producing a sensor signal, defining a loop with the adjustable valve.

b. However, Rondeau et al. teach a computer interface for an operator to monitor, calculate, process, and control the several flows of a machine for mixing a plurality of solid materials such as cement (para 23) with water; which is aided by a sensor control loop (para 62-63) including flow meter sensors 104 and 128 (paras 19, 32, 35) to measure and control the flow rates of the flowing solid materials by means of controllable valves, such as valve 304 (para 24). Since Davies teach control means to control the action of the various valves in their apparatus (4:27-33) as outlined above, it would have been obvious to one of ordinary skill in the art of mixing substances to provide mechanical sensor means to directly supply the control means of Davies with needed information about the state of the system it means to control, and relieve the human operator of this task. Alternatively, if Davies should be considered to inherently teach the use of a human operator as sensor means, monitoring the various flows by eye, it would have been obvious to one of ordinary skill in the art to replace the human observer with a mechanical or automatic device. The Courts have held that broadly providing a mechanical or automatic means to replace manual activity which has accomplished the same result involves only routine skill in the art: for example, the addition to a prior art factory of a computer to automatically adjust

local environmental conditions in response to sensor inputs, in place of a human being previously employed for the same. See *In re Venner*, 262 F.2d 91, 95, 120 USPQ 193, 194 (CCPA 1958).

13. With regard to claim 6, Rondeau et al. teach that the use of knife gate valves as adjusting means is a common practice in the art of mixing cement (para 63).

14. With regard to claim 7, Davies disclose (figure 1) that the vertical walls of their hoppers form an angle to the vertical of approximately 0 degrees.

15. With regard to claim 8, Davies teaches that the mixer 3 includes dispersing means, the lower half of mixer 3 blocking direct flow downward and acting as an obstacle to the global flow, statically mounted inside its main body comprising as it does a portion of it (figure 1).

16. Claim 8 is additionally rejected under 35 U.S.C. 103(a) as being unpatentable over WO 98/34721 by Davies in view of US 2003/0072208 A1 by Rondeau et al, and further in view of US 6,461,552 B1 to Geiger. Davies and Rondeau et al teach an apparatus which may be used to mix concrete, including a static mixer 3 in the flow path for mixing the mixture as it is conveyed into hopper 7, including dispersing means, the lower half of mixer 3 blocking direct flow downward and acting as an obstacle to the global flow, statically mounted inside its main body comprising as it does a portion of it (figure 1). Alternatively, Geiger teaches a method for teaching the mixing of concrete using a gravity flow mixer 5, an analogous problem-solving area to those of Davies and Rondeau et al, where the mixing hopper 5 includes dispersing means, baffle 12 or alternatively prismatic element 18 (figures 4 and 5), statically mounted inside its main

body and acting as an obstacle to the global flow of materials entering its inlet (3:58-4:15). It would have been obvious to one of ordinary skill in the art to provide the hopper 7 of Davies and Rondeau et al with the static dispersing means of Geiger: the motivation would have been to enhance the mixing of the falling substances (Geiger 3:63-65, 4:12-15).

Conclusion

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **this action is made final**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Janca whose telephone number is (571) 270-5550. The examiner can normally be reached on M-Th 8-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on (571) 272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AJJ

/DAVID L. SORKIN/
Primary Examiner, Art Unit 1797